

PART I

SECTION C

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PART I

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 - INTRODUCTION

This Performance-Based Management Contract (PBMC) is for the management and operation of the Thomas Jefferson National Accelerator Facility (referred to as TJNAF or the Laboratory). The Contractor shall, in accordance with the provisions of this contract, accomplish the missions and programs assigned by the U.S. Department of Energy (DOE) and manage and operate the Laboratory. TJNAF, as one of the DOE's Office of Science (SC) program-dedicated Laboratories, uses intense polarized electron beams to conduct research for the DOE Nuclear Physics Program. This research addresses one of the five major scientific questions of the Nuclear Physics Program identified in the DOE/NSF Nuclear Science Advisory Committee's 2002 Long Range Plan, namely, What is the structure of the nucleon? Answering this question requires a quantitative understanding of the properties of quark confinement in nuclear matter.

The Laboratory is a Federally Funded Research and Development Center (FFRDC) established in accordance with the Federal Acquisition Regulation (FAR) Part 35 and operated under this management and operating (M&O) contract, as defined in FAR 17.6 and DEAR 917.6.

The Contractor has the responsibility for total performance under the contract, including determining the specific methods for accomplishing work effort, performing quality control, and assuming accountability for accomplishing the work under the contract.

Because the research activities of the Laboratory are dynamic, this Statement of Work (SOW) is not intended to be all inclusive or restrictive, but is intended to provide a broad framework and general scope of the work to be performed at the Laboratory during the term of the contract. This SOW does not represent a commitment to, or imply funding for, specific projects or programs. All projects and programs will be authorized individually by DOE and/or other work sponsors in accordance with the provisions of this contract.

C.2 - PERFORMANCE EXPECTATIONS, OBJECTIVES, AND MEASURES

C.2.1 – Expectations for Program Development and Mission Accomplishment

The Contractor is expected to provide the highest quality of planning, management, and execution of assigned research and development programs. The Contractor is expected to execute assigned programs so as to achieve the greatest possible impact on DOE's mission objectives, to

aggressively manage the Laboratory's science and technology capabilities and intellectual property to meet these objectives, and to initiate innovative concepts and research proposals that are in concert with DOE missions. The Contractor is expected to propose work that will advance DOE's mission objectives and that is aligned to Laboratory capabilities. The Contractor is expected to strive to meet the highest standards of scientific quality and productivity, delivery of program deliverables on schedule and budget, and first-rate service to the research community through user facility operation.

The Contractor is expected to demonstrate benefit to the nation from R&D investments by transferring technology to the private sector and supporting excellence in science and mathematics education consistent with achieving continuous progress towards DOE's core missions.

The Contractor is expected to be an active partner with DOE in assuring that the Laboratory is equipped to meet future mission needs.

C.2.2 - Expectations for Performance Evaluation

The performance expectations of this contract are broadly set forth in this Section and reflect the DOE's minimum needs and expectations for Contractor performance. Specific performance work statements, performance standards (measures applied to results/outputs), acceptable performance levels (performance expectations), acceptable quality levels (permissible deviations from performance expectations), and related incentives shall be established annually, or at other such intervals determined by the DOE to be appropriate. The related incentives may be monetary, or where monetary incentives are not desirable or considered effective, the Contractor's performance may be used as a factor which directly affects the past performance report card, or a factor in a decision to reduce or increase DOE oversight or Contractor reporting, as appropriate.

In performance under this contract, the Contractor shall be evaluated within the following general performance goals and expectations:

- (a) Science and Technology (S&T) - The Contractor will deliver innovative, forefront science and technology aligned with DOE strategic goals in a safe, environmentally sound, and efficient manner, and will conceive, design, construct, and operate world-class user facilities.
 - (1) Quality of S&T: Produce original, creative scientific output that advances science and technology while achieving sustained scientific progress and impact that is clearly recognized by the technical community.

- (2) Relevance to DOE Missions and National Needs: Conduct the highest quality scientific research that advances the missions of DOE and other national programs and contributes to U.S. leadership in international scientific and technical communities.
 - (3) Success in Constructing and Operating Research Facilities & Equipment: Provide quality strategic planning for facilities/equipment needed to insure the Laboratory can meet its S&T missions, while effectively and efficiently maintaining current S&T facilities and equipment and providing effective, efficient operation of user facilities.
 - (4) Effectiveness and Efficiency of Research Program Management: Provide for effective stewardship of laboratory capabilities, including human expertise, and success in risk management and in building relationships with government, universities, and industry.
- (b) Laboratory Leadership, Management and Operations - The Contractor will provide leadership to assure mission accomplishment and will manage and enhance operations to provide an effective and efficient work environment that enables the execution of the TJNAF mission in a manner responsive to customer and stakeholder expectations.

C.2.3 - Performance Objectives and Measures

The results-oriented performance objectives of this contract are stated in the Performance Evaluation and Measurement Plan (Appendix B), and/or in the Work Authorization Directives issued annually in accordance with the special clause entitled, "Long-Range Planning, Program Development and Budgetary Administration". The Contractor shall develop a five-year Institutional Plan for the overall direction of the Laboratory and for the accomplishment of these objectives. The Plan shall be actively maintained and annually updated in accordance with Institutional Planning instructions issued by the DOE Site Manager. The objectives shall be accomplished within an overall framework of management and operational performance requirements and standards contained elsewhere in this contract. To the maximum extent practicable, these requirements and standards have also been structured to reflect performance-based contracting concepts, including clause H.18 entitled, "Application of DOE Contractor Requirement Documents", which permits the Contractor to propose to the Contracting Officer alternative and/or tailored approaches based on national, commercial or industrial standards and best business practices to meet the outcomes desired by the Government.

DOE's process for evaluating the Contractor's performance under the contract shall consist of the Performance Evaluation and Measurement Plan (PEMP) as called for within the Part II, Section I contract clause entitled, "Total Available Fee: Base Fee Amount and Performance Fee Amount". The PEMP establishes the process DOE shall use to ensure that the Contractor has performed in accordance with the performance standards and expectations. The PEMP shall summarize the performance standards, expectations and acceptable quality levels for each task; describe how performance will be monitored and measured; describe how the results will be evaluated; and state how the results will affect contract payment.

The Contractor shall develop and implement a Laboratory assurance process, acceptable to the Contracting Officer, which provides reasonable assurance that the objectives of the Contractor's management systems are being accomplished and that the systems and controls will be effective and efficient. The Contractor's assurance process shall reflect an understanding of the risks, maintain mechanisms for eliminating or mitigating the risks, and maintain a process to ensure that the management systems and their attendant assurance process(es) meet contract requirements.

C.3 – PERFORMANCED BASED STATEMENT OF WORK

The Statement of Work to be performed under this contract is as follows:

C.3.1 General Scope of Undertaking/Engagement of Contractor

The Contractor shall provide, in accordance with the provisions of this contract, the intellectual leadership and management expertise necessary and appropriate to manage, operate, and staff the TJNAF in order to accomplish the research mission and roles assigned by the DOE to the Laboratory; and to perform the work described in this SOW. The DOE research activities are assigned through strategic planning, program coordination, and cooperation between the Laboratory and DOE.

In performing the contract work, the Laboratory shall implement appropriate program and project management systems to track progress and pursue cost effectiveness in work activities; develop integrated plans and schedules to achieve program objectives, incorporating input from DOE and stakeholders; maintain sufficient technical expertise to manage activities and projects throughout the life of a program; maintain Laboratory facilities and infrastructure as necessary to accomplish assigned missions; and utilize appropriate technologies and management systems to improve cost efficiency and performance.

C.3.2 - Mission

- C.3.2.1. The central mission of the Laboratory is to provide the scientific leadership needed to conduct the world class science and technological innovation in support of the research program of the Office of Nuclear Physics and any other research programs and missions authorized by SC and DOE. The Laboratory's mission addresses four distinct goals:
- To perform the highest quality research in Nuclear Physics in a manner that ensures employee and public safety and protection of the environment;
 - To develop, maintain, and operate unique national experimental facilities that are available to qualified investigators;
 - To educate and train future generations of scientists and engineers to promote the Department's national science and education goals; and
 - To transfer knowledge and technological innovations and foster productive relationships among Laboratory research programs, universities, and industry in order to promote national economic competitiveness.
- C.3.2.2. Consistent with C.3.2.1 above, the Contractor shall:
- i. Provide the scientific, technical and administrative leadership, management and expertise needed to sustain and enhance TJNAF as an international unclassified user research facility that meets the high expectations and standards of DOE's science program and its related user community;
 - ii. Conduct a strategic planning process and develop Institutional Plans and strategic facility plans in consideration of planning guidance and strategic planning material provided by DOE to assure consistency with DOE missions and goals and with due regard for Environment, Safety, and Health (ES&H) issues;
 - iii. Operate and maintain the electron beam accelerator along with associated beam distribution systems, experimental areas and equipment for the purpose of conducting the approved scientific research program;

- iv. Attract, develop, and retain an outstanding and diverse work force, with the expertise and capabilities needed to meet DOE's evolving mission needs;
- v. Renew and enhance research facilities and equipment so that the Laboratory maintains state-of-the-art capability over time and is well-positioned to meet future DOE needs;
- vi. Build and maintain in collaboration with the Laboratory's user community a financially-viable research program that seeks opportunities with the highest possible scientific merit;
- vii. Provide a support program to the user community that will optimize the overall scientific productivity of the Laboratory's research program.
- viii. Design, construct, operate and maintain the related laboratory facilities necessary to support the accelerator operations and physics research program;
- ix. Provide the necessary facilities and infrastructure to conduct national and international user research at TJNAF in a safe, cost-effective and timely manner;
- x. Conduct experimental and theoretical physics research, host meetings and seminars involving science and technologies related to TJNAF's mission and publish the results of such research in appropriate scientific journals;
- xi. Maintain a vibrant relationship with the broader research community that enhances the intellectual vitality and research relevance of the Laboratory and brings the best possible capabilities to bear on DOE mission needs through partnerships;
- xii. Build a positive, supportive relationship founded on openness and trust with the local community and region;

C.3.2.3. Operational and Financial Management Excellence

The Contractor is expected to effectively and efficiently manage and operate the Laboratory through best-in-class management practices designed to foster world-class research while assuring the protection and proper maintenance of DOE research and information assets, the health and safety of Laboratory staff and the public, and the environment. The Contractor is expected to

operate the Laboratory so as to meet all applicable laws, regulations, and requirements. The Contractor is expected to manage the Laboratory cost-effectively, while providing the greatest possible research output per dollar of research investment, and, accordingly, to develop and deploy management systems and practices that are designed to enhance research quality, productivity, and mission accomplishment consistent with meeting operational requirements.

C.3.2.4. Environmental, Safety and Health Management Programs.

All work under this contract shall be conducted in a manner that will assure the safety and health of employees and the public. This objective is to be accomplished by the Laboratory implementing an Integrated Safety Management System that includes an Environmental Management System.

Protection of Workers, the Public and the Environment is paramount. The safety and health of workers and the public and the protection and restoration of the environment are fundamental responsibilities of the Contractor. Accordingly, the Contractor shall implement a Laboratory Integrated Safety Management (ISM) programs system which establishes the environmental, safety, and health processes that support the safe performance of all Laboratory work. The ISM system shall incorporate Environmental Management Systems, in cooperation with regulatory agencies. The ISM system shall be applied to all Contractor activities conducted by the Laboratory or for the Laboratory through subcontractors or other entities, and shall include ES&H oversight of both Laboratory and subcontractor operations. The work shall include environmental and cultural resource protection, pollution prevention, the safety management program system, risk based worker health program, environmental restoration and waste management, environmental management system, and emergency management programs.

The Laboratory shall be responsible for investigations, monitoring, clean-up, containment, restoration, removal, decommissioning and other remedial activity (including any costs for defense of litigation related thereto), for the management and/or clean-up of oil spills, contamination or releases of any solid wastes, hazardous wastes and constituents, hazardous or radioactive substances, wastes or materials present in soil, groundwater, air, surface water, facilities and structures (whether subsurface or above ground), as a result of research or other work conducted by the laboratory during the term of the contract.

The Laboratory shall execute pollution prevention efforts to advance cost-effective waste reduction, environmental release reduction, environmentally preferable purchasing, and environmental sustainability in facility construction and operation, in all site operations and facilities covered by this contract.

C.3.2.5. Integrated Safeguards and Security (ISSM)

The Contractor shall protect Laboratory assets, personnel, property, and information to sustain the science mission in a manner commensurate with risks. The Contractor shall conduct a Laboratory Integrated Safeguards and Security Management program to include physical site security, protection of Government property, cyber security protections, protection of information, personnel security, export controls, and access control for Laboratory staff and visitors.

C.3.2.6. Business Management.

The Contractor shall manage an effective integrated system of internal controls for all business and administrative operations of the Laboratory.

- i. Human Resources Management. The Contractor shall establish and maintain human resource systems which attract and retain outstanding employees, and continually motivate them to achieve high productivity in scientific research and Laboratory operations.

The Contractor also shall create and maintain at the Laboratory an environment that promotes diversity and fully utilizes the talents and capabilities of a diverse workforce. The Contractor shall seek to recruit a diverse workforce by promoting and implementing DOE and Laboratory goals. Special consideration will be given to Historically Black Colleges and Universities and Minority Institutions as potential resource pools. The Contractor shall also strive to promote diversity in all of the Laboratory's subcontracting efforts with emphasis on the use of the types of businesses identified in the Small Business Subcontracting Plan clause of this contract.

- i. Financial Management. The Contractor shall maintain a financial management system responsive to the obligations of sound financial stewardship and public accountability. The overall system shall include an integrated accounting system suitable to collect, record, and report all financial activities; a

budgeting system which includes the formulation and executions of all resource requirements needed to accomplish projected missions and formulate short- and long-range budgets; an internal control system for all financial and other business management processes; and a disbursements system for both employee payroll and supplier payments.

- ii. Purchasing Management. The Contractor shall have a DOE-approved purchasing system to provide purchasing support and subcontract administration. The Contractor shall, when directed by DOE and may, but only when authorized by DOE, enter into subcontracts for the performance of any part of the research work under this contract.
- iii. Property Management. The Contractor shall have a DOE approved property management system that provides assurance that the Government owned, contractor held property is accounted for, safeguarded and disposed of in accordance with DOE's expectations and policies. The Contractor shall perform overall integrated planning, acquisition, maintenance, operation, management and disposition of Government-owned personal and real property, and Contractor-leased facilities and infrastructure used by the Laboratory. Real property management shall include providing office space for the DOE Site Office as directed by the DOE TJNAF Site Office Manager.

C.3.2.7. Legal Services.

The Contractor shall maintain legal support for all contract activities including, but not limited to, those related to patents, licenses, and other intellectual property rights; subcontracts; technology transfer; environmental compliance and protection; labor relations; and litigation and claims.

C.3.2.8. Information Resources Management.

The Contractor shall maintain information systems for organizational operations and for activities involving general purpose programming, data collection, data processing, report generation, software, electronic and telephone communications, and computer security. Contractor shall provide computer resource capacity and capability sufficient to support Laboratory-wide information management requirements. The Contractor also shall conduct a records management program.

C.3.2.9. Science and Mathematics Education and Other Cooperation with Research and Educational Institutions

The Contractor shall work extensively with colleges and universities, with special consideration for Historically Black Colleges and Universities and Minority Education Institutions, and programs to enhance science and mathematics education at all levels. Participation by a diverse group of faculty and students in Laboratory programs brings their talents to bear on important research problems and contributes to the education of future scientists and engineers. The Laboratory shall also conduct many programs for pre-college students and faculty to enrich mathematics and science education. A particular purpose of these programs is to encourage members of under-represented societal groups to enter careers in science and engineering.

The Laboratory's broad program of cooperation with the academic and educational community and with nonprofit research institutions has the purpose of promoting research and education in scientific and technical fields of interest to DOE's programs and facilitating interrelationships in these fields between the Laboratory and other research and educational institutions. This cooperation may include, but is not limited to, such activities as the following:

- i. Joint experimental programs with colleges, universities, and nonprofit research institutions;
- ii. Interchange of college and university faculty and Laboratory staff;
- iii. Student/teacher educational research programs at the pre-collegiate and collegiate level;
- iv. Post-doctoral programs;
- v. Arrangement of regional, national, or international professional meetings or symposia;
- vi. Use of special Laboratory facilities by colleges, universities, and nonprofit research institutes; or
- vii. Provision of unique experimental materials to colleges, universities, or nonprofit research institutions or to qualified members of their staffs.

C.3.2.9. International Collaboration

In accordance with DOE policies, and in consultation with DOE, the Contractor will maintain a broad program of international collaboration in areas of research of interest to the Laboratory and to DOE. This collaboration will be both in areas where DOE has formal international cooperation agreements which assign the Contractor a specific role, as well as in areas of general interest to the Laboratory's and DOE's research programs.

This collaboration may include, but is not limited to, such activities as:

- i. Participation in assigned aspects of formal international agreements;
- ii. Maintenance of liaison with peer groups in the international R&D community;
- iii. Participation in programs of international scientific organizations;
- iv. Developing and proposing to DOE, joint experimental programs and/or work for others from international sponsors;
or
- v. Participation in programs involving visits, assignments, or exchanges of staff/students.

C.3.2.10. General Assistance and Services

The Contractor shall furnish such technical and scientific assistance (including training and other services, material, and equipment), which are consistent with and complementary to the DOE's and Laboratory's mission under this contract, both within and outside the United States. The Contractor may provide these services to the DOE and its installations, contractors, and interested organizations and individuals, as may be authorized, in writing, by the Contracting Officer.

C.3.2.11. Other Research and Development Work

The Laboratory shall conduct research and development work for non-DOE sponsors which is consistent with and complementary to the DOE's mission and the Laboratory's mission under the

contract, does not adversely impact or interfere with execution of DOE-assigned programs, does not place the facilities or Laboratory in direct competition with the domestic private sector, and for which the personnel or facilities of the Laboratory are particularly well adapted and available, as may be authorized, in writing, by the Contracting Officer.

C.3.2.12. Dissemination of Information

The Laboratory shall undertake activities pertaining to the dissemination of information relating to energy in general and Laboratory programs in particular and the stimulation and encouragement of such work by employees of the Contractor and users of the Laboratory, subject to the patent provisions and other applicable provisions of this contract.

C.3.2.13. Special Responsibilities

Provide Operating & Maintenance Services and ES&H Advisory Services for the Applied Research Center (ARC) Building:

- i. Contractor shall perform the operating & maintenance (O&M) services and ES&H advisory services in accordance with the Memorandum of Agreement (Appendix J) with the Economic Development Authority of the City of Newport News. The Contractor shall negotiate in good faith with the City of Newport News to initiate a new memorandum of agreement within 90 days of contract award.
- ii. The cost incurred by the Contractor in performing such services shall be in accordance with the provisions specified in **XXXXX**.
- iii. The costs incurred by Contractor in performing O&M services shall be reimbursed by the Economic Development Authority in accordance with paragraph 4 of the Memorandum of Agreement. Any costs that are not reimbursed by the Economic Development Authority in accordance with paragraph 4 of the Memorandum of Agreement shall be forwarded to the Contracting Officer for a determination of allowability.

The Contractor will provide an annual report at the end of each fiscal year detailing the costs incurred in performing O&M services and ES&H advisory services for the Economic Development Authority and costs reimbursed by the Economic Development Authority for the O&M services.

C.4 - PLANS AND REPORTS

The Contractor shall submit periodic plans and reports, in such form and substance as required by the Contracting Officer. These periodic plans and reports shall be submitted at the interval, and to the addresses and in the quantities as specified by the Contracting Officer. Where specific forms are required for individual plans and reports, the Contracting Officer shall provide such forms to the Contractor. The Contractor shall be responsible for levying appropriate reporting requirements on any subcontractors in such a manner to ensure that data submitted is compatible with the data elements that the prime contractor is responsible for submitting to DOE. Plans and reports which may be submitted in compliance with this provision are in addition to any other reporting requirements found elsewhere in other clauses of this contract. Notwithstanding the "Changes" clause of this contract, set forth in Part II, Section I - Contract Clauses, the Contracting Officer may require plans and reports to be submitted pursuant to the above without any adjustment in the fee, if any, under this contract.